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AMSAT NEWS SERVICE
ANS-359

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org.

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

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ANS-359 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2022 DEC 25

CAS-5A and CAS-10 User Manuals Available

OSCAR-118 (CAS-5A) was launched on December 9, 2022. It adopts a 6U CubeSat structure with six sides body-mounted solar panels. A three-axis stabilized attitude control system is used. Long-term power consumption is about 10 Watts.

- CW telemetry beacon: 435.570 MHz @ 22wpm

- GMSK telemetry: 435.650 MHz @ 4800/9600bps

- V/U mode linear transponder: Uplink = 145.820 MHz; Downlink = 435.540 MHz; Bandwidth = 30kHz; Spectrum = Inverted

- V/U mode FM transponder: Uplink = 145.925 MHz; Downlink = 435.600 MHz; Bandwidth = 16kHz

- H/U mode linear transponder: Uplink = 21.435 MHz; Downlink= 435.505 MHz; Bandwidth = 15kHz: Spectrum = Normal

The user manual, written by Alan Kung, BA1DU, is available for download at https://tinyurl.com/ANS-359-0-118-Manuak

On December 18, 2022, CAMSAT's satellite XW-4 (CAS-10) was deployed from the Tianzhou-5 cargo ship that was docked to the Tiangong space station. CAS-10 carries a linear Amateur Radio transponder. CAS-10 satellite adopts a 8U CubeSat structure with four solar array panels. A three-axis stabilized attitude control system is used. Long-term power consumption is about 18.3 Watts.

Specification for the onboard radio systems are:

- CW Telemetry Beacon: 435.575 MHz @ 22wpm

- GMSK Telemetry 435.275 MHz @ 4800 bps

- V/U mode linear transponder: Uplink frequency: 145.870 MHz/Downlink frequency: 435.180 MHz, 30 KHz Spectrum inverted

The user manual, also written by Alan Kung, BA1DU, is available for download at https://tinyurl.com/ANS-359-CAS-10-Manual.

[ANS thanks AMSAT-UK for the above information.]

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[ANS thanks the ARRL for the above information.]

SSTV Unit on ISS is Inoperable

The ARISS SSTV capability is currently not operational. The SSTV card that interfaces with the ISS computer was damaged and cannot be reliably used. Also, ISS has recently switched to a new complement of laptops, which requires the ARISS Russia team to develop a new computer interface to support SSTV. ARISS Russia has been actively working this new development and is consulting with the ARISS International hardware/software team on these efforts. Sergey Samburov, RV3DR, ARISS Russia leader, has stated that they expect to complete the SSTV development effort early next year and launch the hardware on a future Progress flight later in the year. Until then, SSTV operations will be down.

The ARISS International team will keep all informed about SSTV status through its web site http://www.ariss.org and its social media outlets.

[ANS thanks ARISS for the above information.]

Bill to Eliminate Private Land Use Restrictions on Amateur Radio Introduced

Congressman Bill Johnson (OH-6) introduced a bill in the U.S. House of Representatives (H.R.9670) on Thursday, December 22, 2022, to eliminate private land use restrictions that prohibit, restrict, or impair the ability of an Amateur Radio Operator from operating and installing amateur station antennas on property subject to the control of the Amateur Radio Operator.

The exponential growth of communities subject to private land use restrictions that prohibit both the operation of Amateur Radio and the installation of amateur station antennas has significantly restricted the growth of the Amateur Radio Service. These restrictions are pervasive in private common interest residential communities such as single-family subdivisions, condominiums, cooperatives, gated communities, master-planned communities, planned unit developments, and communities governed by community associations. The restrictions have particularly impacted the ability of Amateur Radio to fulfill its statutorily mandated duty of serving as a voluntary noncommercial emergency communications service.

Congress in 1996 directed the Federal Communications Commission (FCC) to promulgate regulations (Public Law 104-104, title II, section 207, 110 Stat. 114; 47 U.S.C. 303 note) that have preempted all private land use restrictions applicable to exterior communications facilities that impair the ability of citizens to receive television broadcast signals, direct broadcast satellite services, or multichannel multipoint distribution services, or to transmit and receive wireless internet services. ARRL attempts to obtain similar relief for Amateur Radio were rejected by the FCC with a statement such relief would have to come from Congress.

ARRL Legislative Advocacy Committee Chairman John Robert Stratton, N5AUS, noted that Congress, in 1994 by Joint Resolution, S.J.Res.90/H.J.Res.199, declared that regulations at all levels of government should facilitate and encourage the effective operation of Amateur Radio from residences as a public benefit. He continued by stating that "H.R.9670, the Amateur Radio Emergency Preparedness Act, is intended to fulfill that mandate and preserve the ability of Amateur Radio Operators to continue to serve as a key component of American critical communications infrastructure."

Read more at http://www.arrl.org/member-bulletin?issue=2022-12-23.

[ANS thanks the ARRL for the above information.]

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768 teams enter The Astro Pi Mission Space Lab 2022/23

This year, 768 teams made up of 3086 young people from 23 countries sent Raspberry Pi their ideas for experiments to run on board the International Space Station (ISS) for Astro Pi Mission Space Lab.

Mission Space Lab is part of the European Astro Pi Challenge, an ESA Education programme run in

collaboration with us at the Raspberry Pi Foundation. Mission Space Lab teams can choose between ‘Life on Earth’ and ‘Life in space’ for their experiment idea.

A panel of 25 judges from the Raspberry Pi Foundation and ESA Education assessed the submitted ideas. They were restricted in how many teams could be accommodated, as time to run experiments on board the ISS is limited, especially for ‘Life on Earth’ experiments which need time in a nadir window. The standard of the submitted ideas was higher than ever, making this the toughest judging yet. The judges were delighted are delighted to announce that 486 teams will move on to Phase 2 of Mission Space Lab: writing the code for their experiments.

All the teams whose experiment ideas were selected will receive a special Astro Pi hardware kit, customised to their idea, to help them write and test the Python programs to execute their experiments. Once the teams of young people have received their kits, they can familiarise themselves with the Astro Pi hardware and then create and test (and re-test!) their programs.

[ANS thanks RaspberryPi.org for the above information.]

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[ANS thanks Joe Fitzgerald, KM1P, AMSAT IT Team, for the above information.]

ARISS NEWS

Amateurs and others around the world may listen in on contacts between amateurs operating in schools and allowing students to interact with astronauts and cosmonauts aboard the International Space Station. The downlink frequency on which to listen is 145.800 MHz worldwide.

No school contracts are currently reported.

The latest information on the operation mode can be found at
https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information.]

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[ANS thanks ARRL for the above information.]

+ In still more legislative news, Congresswoman Debbie Lesko (AZ-08) introduced a bill in the U.S. House of Representatives (H.R. 9664) on December 21, 2022, to require that the Federal Communications Commission (FCC) replace the current HF digital symbol rate limit with a 2.8 kHz bandwidth limit. [ANS thanks ARRL Letter for the above information.]

+ Possibly due to a micrometeoroid or debris strike, the Soyuz MS-22 capsule docked to the ISS has suffered an external radiator coolant leak. If it is determined to be unsafe for a crewed return trip, cosmonauts Sergey Prokopyev and Dimitri Petelin along with NASA astronaut Frank Rubio would be effectively trapped until a replacement could be launched. That replacement, the Soyuz MS-23 capsule, is apparently being accelerated for a potential uncrewed launch and would be remotely piloted to the ISS. This is possibly the most significant "emergency" situation in the 20+ year history of the ISS. [ANS thanks The Orbital Index for the above information.]

+ Another roll-out solar array was installed and deployed by astronauts Frank Rubio and Josh Cassada outside the International Space Station on a spacewalk Thursday, Dec. 22, a day later than previously planned after the space station needed to dodge a piece of space junk. The original solar panels launched on four space shuttle missions from 2000 to 2009. As expected, the efficiency of the station's original solar arrays has degraded over time. NASA is upgrading the space station's power system with the new roll-out solar arrays - at a cost of $103 million - which will partially cover six of the station's eight original solar panels. [ANS thanks SpaceflightNow for the above information.]

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Frank Karnauskas, N1UW
n1uw at amsat dot org